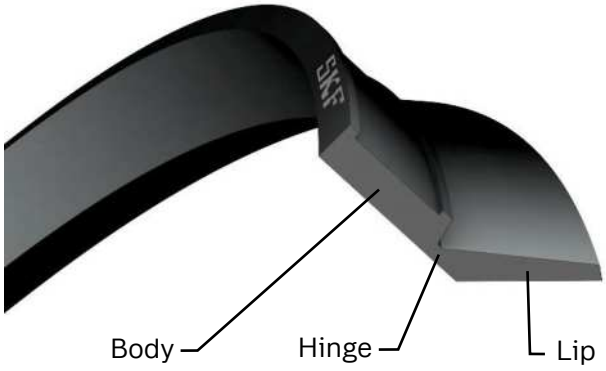
Seal data sheet

TR/VA/NCA



The TR/VA/NCA seal is a very flexible axial shaft seal or V-ring, developed based on SKF / TENUTE experience over the years to properly operate in applications without pressure.

The seal body is completely made of rubber and the cross section consists of three main parts:

The TR/VA/NCA body helps to keep the seal in the right position on the shaft during rotation. It features a groove for the fixing clamp.

Due to the shape of the sealing lip and the resilience of the polymer used, the TR/VA/NCA seal compensates both for angular deviations as well as axial displacement between the shaft and the sealing surface.

The hinge connects the elastic sealing lip with the solid body. It works as a spring between the seal body and the sealing lip. It enables a constant pressure of the sealing lip onto the mating surface.

Exclusive features of TR/VA/NCA seals are:

- Resistance to possible shaft misalignments, angular deviations as well as axial displacements
- Additional groove at the seal body to keep the fixing clamp in position

Possible size range for TR/VA/NCA seals: ØSHAFT$_{min}$ = 200 mm; ØSHAFT$_{max}$ = 1 820 mm (please also see the drawing at the next page).

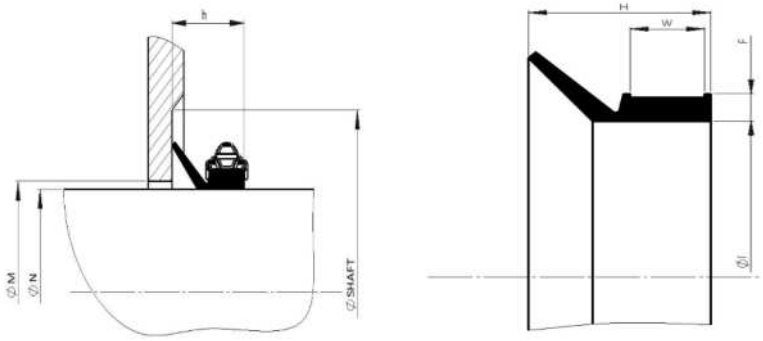
Materials

The standard material for the TR/VA/NCA is a nitril elastomer (NBR) with 60 Shore A filled with PTFE, but for particular applications, the TR/VA/NCA can be manufactured in different materials like hydrogenated nitril elastomer (HNBR), silicone elastomer (VMQ) or fluorocarbon elastomer (FKM). The table below shows working temperature ranges (minimum, maximum, peak (*)) applicable to each type of compound.

Material	**Temperature**	
	min	max
	°C	°C (*)
NBR	-30	+100 (+120)
HNBR	-40	+150 (+175)
VMQ	-50	+200 (+250)
FKM	-20	+200 (+250)

Assembly of TR/VA/NCA seals

The left drawing shows the details of the housing dimensions and the assembly of the TR/VA/NCA seal. In the right-hand drawing you can see the seal cross section and related dimensions. Please also refer to the table below.



Particular applications or requirements different from those details shall be agreed with the TENUTE Technical Department / SKF Seals Application Engineering.

The TR/VA/NCA axial shaft seal with a fixing clamp can be used for circumferential shaft speeds 10 – 12 m/s without any axial or radial locking system.

ØSHAFT		**ØN**	**ØM**	**h**	**H**	**F**
Over	Up to	max	min			
mm	mm	mm	mm	mm	mm	mm
19	38	ØSHAFT + 2	ØSHAFT + 12	6 ±0,8	7,5	4
38	68	ØSHAFT + 3	ØSHAFT + 15	7 ±1,0	9	5
68	105	ØSHAFT + 4	ØSHAFT + 18	9 ±1,2	11	6
105	155	ØSHAFT + 4	ØSHAFT + 21	10,5 ±1,5	12,8	7
155	210	ØSHAFT + 5	ØSHAFT + 24	12 ±1,8	14,5	8
210	2 020	ØSHAFT + 10	ØSHAFT + 45	20 ±4,0	25	15

Surface finishing

For shuffling surfaces, a roughness of Ra from 0,3 to 1,6 µm is recommended for most of the standard applications, while in case of high speeds, a finishing to Ra from 0,2 to 0,6 µm is recommended. For the shaft no special tolerance or roughness is required, but we recommend keeping Ra values below 3,2 µm.

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